

REMARKS

In the Office Action, claims 13 and 14 were rejected pursuant to 35 U.S.C. § 102(b) as anticipated by Lemmand (U.S. Patent No. 3,171,106). The Examiner rejected claims 1-12 and 32-37 pursuant to 35 U.S.C. § 102(e) as being anticipated by Aime (U.S. Patent No. 6,467,138). Claims 1-10, 12, and 32-37 were again rejected pursuant to 35 U.S.C. § 102(b) as being anticipated by Corbett et al. (U.S. Patent No. 6,266,857). Claims 3, 5-12, and 33-36 were rejected pursuant to 35 U.S.C. § 102(b) as being anticipated by Lum et al. (U.S. Patent No. 5,701,901). Claims 1-12 and 32-27 were rejected pursuant to 35 U.S.C. § 102(b) as being anticipated by Miller, et al. (U.S. Patent No. 5,267,221). Applicants respectfully request reconsideration of the rejected claims, including independent claims 1, 3, 5, 7, 9, and 13.

Regarding the rejection of independent claims 1, 3, 5, 7 and 9 over Aime and Corbett, et al., the Examiner continues to allege the matching layer recitation in the preamble as not having patentable weight despite the Jepson format. To move prosecution along, Applicants have changed the format to include the matching layer recitations in the body of the claim.

The claims also include the relative acoustic impedance of the matching layer, transducer material and a patient, highlighting the layer as for acoustic matching, not backing.

The position of the matching layer is between the patient and the transducer material. To further distinguish the matching layer from the backing layer, the matching layer is on an opposite side of the transducer material from a first layer as shown in Fig. 7. The first layer is claimed as supporting the elements but is free of through kerfs. This backing layer is on an opposite side of the transducer material than the patient and matching layer, again highlighting the distinction between the backing as first layer and the matching layer, as suggested by the Examiner.

Corbett, et al and Aime clearly disclose structures for (1) backing layers, not matching layers, (2) layers opposite a patient from the transducer material, not between the transducer material and the patient, and (3) sound absorbing material, not material with an acoustic impedance between transducer material and a patient.

Lum et al. disclose a matching layer 196 (col. 14, lines 16-23). A groove 210 is cut through the matching layer and filled with a conductive material 212, such as silver epoxy (col. 14, lines 43-53; and Figs 20A, 20B and 21). The matching layer 196 and conductor 212 are coated with an electrically insulating material, and then a small portion on an edge is removed for electrical connection (col. 14, line 65-col. 15, line 11). The electrical connection is made by using as little coverage of the matching layer or possible (col. 15, lines 24-31).

Independent claim 3 recites the conductor and at least one additional conductor aligned between the top and bottom surfaces of the matching layer corresponding to an element. Lum et al. form an element (col. 14, lines 58-64). As shown in Fig. 21, a single groove and conductor are provided. Lum et al. do not disclose a conductor and at least one additional conductor between the top and bottom surfaces of the matching layer corresponding to an element.

The Examiner cites to multiple conductors 212 shown in Figure 20B. However, Figure 20B shows a transducer block, not elements (col. 14, lines 4-11 and 43-52). Under "forming the transducer block," Lum, et al. start by stacking layers in a plate shaped structure (col. 14, lines 6-34). This transducer block or plate is then diced or cut to form elements or smaller blocks (col. 14, lines 58-64). Figure 21 shows one such element having only a single conductor in the matching layer. The element is separated from other elements by kerfs. Lum, et al. provide multiple conductors for the entire starting block, but only a single matching layer conductor for each kerf-separated element of the array.

Independent claim 5 recites the matching layer comprising castable material. Lum et al. show lapping and adhering the matching layer to the conductor on the PZT (col. 14, lines 20-23), but do not suggest a castable material. Lapping and adhering are done to a solid, not castable, material.

Independent claim 7 recites a via between the top and bottom surfaces of the matching layer, the via having less lateral extent than the top and bottom surfaces. Lum et al. have a groove extending across the entire surface.

Independent claim 9 recites conductive film extending from the top to the bottom surface at least partially within the matching layer. Lum et al. fill a groove with epoxy, and cure

the epoxy. The epoxy in the groove is not a film. There is no suggestion to provide a film of 10 microns or less. Instead, Lum, et al. fill a groove with epoxy.

Miller, et al. describe a backing (title) like Aime and Corbett, et al. The backing desirably fully attenuates acoustic energy (col. 2, lines 32-35). The backing 27 is formed from the block 37 cited by the Examiner (col. 5, lines 28-32). The conductors 39 cited by the Examiner are in the backing (col. 5, lines 28-34). The backing is on a side of the transducer opposite the lens, patient, and matching layer. Miller, et al. describe a backing, not a matching layer as claimed in claims 1-12 and 32-37.

Independent claim 13 has been amended to include different layers of a sonic transducer, including elements of transducer material. Lemmand shows a magnetic material in a thermoplastic data storage medium. Lemmand does not disclose a sonic transducer with transducer material, a matching layer, and a first layer opposite the matching layer relative to the transducer material.

Dependent claims 2, 4, 6, 8 and 10-12 depend on independent claims discussed above, so are allowable for the same reasons as the respective independent claim.

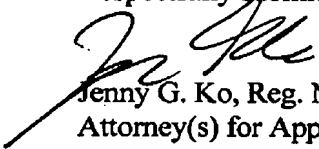
CONCLUSION:

Applicants respectfully submit that all of the pending claims are in condition for allowance and seeks early allowance thereof. If for any reason, the Examiner is unable to allow the application but believes that an interview would be helpful to resolve any issues, he is respectfully requested to call the undersigned at (650) 694-5810 or Craig Summerfield at (312) 321-4726.

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